National Weather Service Advanced Hydrologic Prediction Service

The FY04 President's Budget maintains $6.2M for the Advanced Hydrologic Prediction Service (AHPS) to improve the Nation's capability to take timely and effective actions to mitigate the economic losses from major floods and droughts. National implementation of the AHPS will save lives and an estimated $200 million per year in flood losses, and will contribute an additional $400 million per year in economic benefits to water resource users.

Background

Each year, floods kill more people than any other form of severe weather, and cause damages in excess of $3.5 billion. Three-quarters of all presidentially declared disasters are the result of flooding. Clearly, hydrologic forecasting is critical to public safety and the economy. This forecast information is developed by hydrologists and hydrometeorologists at the 13 River Forecast Centers and is the basis for flash flood and flood warning programs implemented at Weather Forecast Offices.

AHPS provide forecasts of river levels and river flow volumes from an hour to a season for areas large and small, including river forecast information such as:

- How high the river will rise
- When the river will reach its peak
- Where property will be flooded
- How long flooding will continue
- How long a drought will last

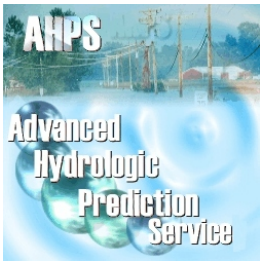
In an average year, more than 130 people are killed by flooding and flash flooding.

AHPS also provides better information to water managers and city officials, helping them to make decisions about water allocation and economics such as:

- When and where to evacuate people, goods and industrial property from potential flood areas, thus saving more lives and contributing to economic savings
- How to utilize reservoir storage capacity and release to reduce flood impacts on people and businesses, including agricultural demands
- When to reinforce levees and at what level, to help reduce damage to areas nearby

AHPS applies new science which provides more accurate forecasts for flow conditions ranging from droughts to floods in a timely and user-friendly manner. The system includes a combination of software and hardware tools used to analyze data and create graphical displays of probability forecasts.

Key Activities



Nationwide implementation of AHPS is currently underway. During FY 04 the NWS will implement AHPS 478 forecast points for a total of 1,228 points in the U.S., accelerating and expanding AHPS in the Upper Mississippi and Ohio river basins, the Northeast, Middle Atlantic, and Southeast regions of the U.S. As implemented AHPS will:

- Produce new information with better predictions of river height and flood potential to reduce loss of life and property
- Deliver high resolution, visually oriented products to provide partners and customers valuable information for decision making
- Refresh aging hydrologic forecasting infrastructure to support rapid infusion of scientific advances
- Leverage NOAA's investments in observational systems and atmospheric models to enhance accuracy and resolution of river forecasts.

Outcomes

AHPS reduces loss of life and property, mitigates flood damages (three fourths of all Presidential Disaster Declarations involve flood damages), leads to a savings of over $750M per year, and significantly improves NOAA's capability to responds to prevalent challenges with energy production and water resource stewardship. Specifically, AHPS:

- Extends existing 1, 2, 3 day river forecasts to 14 day and longer outlooks and provides more information than presently available
- Provides more accurate water forecasts and flood warnings
- Provides better information for decision making, especially with regard to the prevalent challenge with energy production and water resource stewardship.

Budget Summary

Program	FY03 Request	FY 04 Request	Increase
AHPS	$6.2M	$6.2M	0